

Application No.: 10/538,923Docket No.: 4590-421REMARKS

Reconsideration and allowance of the subject application in view of the foregoing amendments and the following remarks is respectfully requested.

Claims 1-9 remain pending in the application. Claims 7, 8 and 9 have been amended.

Applicant appreciatively notes that claims 2-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The abstract of the disclosure is objected to because of the noted informality. The abstract has been amended as suggested by the Examiner. Therefore, this objection should be withdrawn.

Claims 7-9 are rejected under 35 U.S.C. 112 as being indefinite. Claims 7-9 have been amended and the rejection should be withdrawn.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mizushima et al. (5,747,859) in view of Das (5,371,378).

As conceded by the Examiner, Mizushima et al. does not disclose the interface between the emitter and the layers of the base forming a Schottky diode; wherein, the collector is metallic and separated from the base by a thin insulating layer of approximately a few nanometers, the layers forming a tunnel-effect barrier between the base and the collector. Consequently, claim 1 is new in view of Mizushima et al.

The Examiner attempts to overcome this deficiency with Das. Das does not disclose a spin-valve transistor and consequently, claim 1 is new in view of Das. Transistors described in Das are based on structure diamond and belong to a technical domain very different from that of the transistors with spin-valve. It is the same difference between an optical system working with polarized light and an optical system working with unpolarized light. The transistors described by Das do not use the properties of spin of the electrons. The knowledge described in this patent cannot be adapted easily to a transistor with spin-valve. On the other hand, in the transistors with spin-valve, it is impossible to reserve emitter and collector without changing the properties of the transistor. The transistor of the prior art described in Figure 4 (lines 1-18, page 6) of the present application has a base/collector junction of a Schottky type and a base/emitter junction

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emitting by tunnel effect. Nevertheless, this transistor of the prior art presents significant differences with regard to the claimed transistor.

Claim 1 is inventive and is not obvious because it would have been not obvious to one of ordinary skill in the art to form a transistor of Mizushima et al., with an emitter and a collector switched as described in Das because the transistor in Das is not a spin-valve transistor and to reverse emitter and collector has great effects on the properties of the spin-valve transistor.

For at least these reasons, claim 1 is allowable over the combination of Mizushima et al. and Das and the obviousness rejection should be withdrawn. Claims 2-9 recite additional, important limitations and should be patentable for the reasons discussed above with respect to claim 1, as well as on their own merits. Accordingly, the obviousness rejection should be withdrawn.

All objections and rejections having been addressed, it is respectfully submitted that the present application should be in condition for allowance and a Notice to that effect is earnestly solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

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